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ABSTRACT

It was the purpose of this study to assess the effects of films on children, using a measure of interpersonal aggression. It was anticipated that modeling effects would depend simultaneously upon the degree of realism of the model's performance (on a reality-fantasy dimension) and the similarity between the observer's task and the model's behavior. Therefore, aggressive behavior depicted by a human model in a real-life setting might be predicted to have greater effects than cartoon sequences in which both the models and stimulus conditions are imaginary. The subjects were 180 lower elementary school children enrolled in two suburban middle-class schools. Since previous research had indicated that children were somewhat inhibited when they did not know each other, they were generally assigned to pairs within classrooms. The results of this investigation support the prediction that modeling effects depend upon both the degree of realism of the model's performance and the similarity between the observer's task and the model's behavior. (Author/BW)

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The Effect of Realistic Versus Imaginary Aggressive Models on Children's Interpersonal Play

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One of the most frequent criticisms of mass media research concerned with the effects of viewing aggressive acts has focused upon the dependent variables used in these investigations. That is, although there have been a substantial number of studies which reveal that children acquire and voluntarily perform aggressive behaviors identical to those exhibited by a model these behaviors have been primarily directed at various inanimate "victims" such as inflated plastic dolls (e.g. Bandura, Ross, & Ross, 1961; 1963 a, b; Christy, Gelfand & Hartmann, 1971). Critics contend that such studies fail to provide sufficient evidence to substantiate claims that the observation of aggressive behavior increases a person's willingness to harm other individuals (e.g. Klapper, 1968). In a review of research on the relationship between filmed aggression and children's behavior Bryan and Schwartz (1971) also criticized the lack of appropriate criterion measures: "Noteworthy, however, is the relative paucity of experiments designed to assess film effects upon the viewer's assaultive behavior on other persons (57)." In spite of such criticism it appears that few investigators have addressed themselves to this problem. Therefore, it was the purpose of the present investigation to assess the effects of films on children using a measure of interpersonal aggression. Secondly, this study focused upon

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disinhibition effects, or, the exhibition of aggressive responses in the child's repertory prior to viewing an aggressive model. Such responses are, in addition, different from those portrayed by the model. Third, actual television films containing either realistic or imaginary aggressive sequences were used. Finally, since previous research revealed that frustration facilitates aggressive responding following the observation of aggressive models (e.g. Bandura, Ross, & Ross, 1961; 1963 a, b; Hartmann, 1969) all children were tested in pairs in a frustration-inducing situation. This situation, in which only one highly attractive goal object was available to each pair of children is similar to a "competitive games" manipulation previously shown to be successful in arousing frustration (Christy, Gelfand, & Hartman, 1971).

On the basis of social learning theory (Bandura, 1969) it was predicted that children viewing realistic aggressive sequences would demonstrate more aggressive activity than children viewing either an aggressive cartoon or a control film. It was also predicted that children viewing the aggressive cartoons would not differ in their expression of aggressive behavior from those who observed the control film. That is, it was expected that modeling effects depend simultaneously upon the degree of realism of the model's performance (on a reality-fantasy dimension) and the similarity between the observer's task and the model's behavior. Therefore, aggressive behavior depicted by a human model in a real-life setting should have greater effects than cartoon sequences in which both the models and stimulus conditions are imaginary. And, since these models and conditions are imaginary they should not effect children's aggressive play. Such predictions are supported by previous research findings in which the

criterion measure was interpersonal aggression (Hapkiewicz & Roden, 1971; Siegel, 1956) but differ from studies in which cartoon aggression was found to facilitate aggressive responding toward inanimate objects (Lovaas, 1961; Mussen & Rutherford, 1961).

Method

Subjects.

One hundred eighty lower elementary school children enrolled in two suburban middle-class schools served as Ss. The children ranged in age from 6.3 to 10.4 years ($\overline{X}$ = 8.9, SD = .90) and were equally divided by sex. The two schools were in the same district and of comparable socio-economic status (SES).

Design.

A 3 x 2 factorial design was used in this investigation. Since previous research had indicated that children were somewhat inhibited if they did not know each other, Ss were generally assigned to pairs within classrooms. Occasionally Ss were assigned to pairs across classes but only after interviews with the teachers and children revealed that the Ss were acquainted with one another. Secondly, all Ss were classified by SES using the occupational and educational sub-scales of the McGuire-White Scale (Kennedy, 1968). The seven levels of each sub-scale were collapsed into three categories: 1) high: included levels 1 and 2; 2) middle: included levels 3 and 4; and 3) low: included levels 5, 6, and 7. The percentage of Ss within each of these categories was 48%, 38% and 14% respectively. All Ss within each SES category were randomly assigned to same-sex pairs and each pair was randomly assigned

to one of three groups, each group containing 30 boys and 30 girls. The three treatment conditions included: (1) presentation of a real-life aggressive film, (2) presentation of aggressive cartoons, and (3) presentation of a nonaggressive film.

Previous research has shown that the presence of an adult increases the probability that children will exhibit aggressive responses in a free play situation while adult absence inhibits the expression of aggression (Siegel & Kohn, 1959). Therefore, in order to maximize the probability of aggression an experimenter was present throughout all testing.

Films.

Four types of films were used: 1) treatment-aggressive (real-life); 2) treatment-aggressive (2 cartoons); 3) control (nonaggressive); and 4) test film.[1] Total exposure time for each type of film was approximately 15 iminutes. The real-life aggressive film portrayed numerous sequences of physical and verbal aggression amongst the three main characters (Three-Stooges). Typical acts of physical aggression included slapping, pushing, and verbal threats. The aggressive cartoons depicted a continuous barage of instrumental aggression between Mighty Mouse and cats in one case and wolves in the other. In the nonaggressive film a narrator, with the aid of an animated human character, explained several varieties of music and the musical instruments involved in each type. This film was specifically designed for children and, like each of the preceding, was in black and white. The test film depicted the birth of the earth and its first living creatures. Previous research with this film had shown that children were strongly attracted by the bright, flashing colors, the exciting narration and music, and were particularly eager to see the

dinosaurs.

Apparatus.

Each pair of children was given the opportunity to engage in only one attractive activity, watching a "peep-show." This consisted of a large heavy box (mounted on a table) which contained a movie projector and telescreen. The box was brightly painted and a distinct color was used to highlight the location of one hole, about one inch in diameter, in the wall of the box. This provided the only means of viewing the movie within and the size was such that only one child could "peep" through it at a time. However, sound was audible to both Ss since the speaker was placed outside the box. At the opposite end of the room was a large desk, a chair, and a camera. Although in plain view the camera was virtually ignored by the Ss, as was the small microphone placed next to the box. A video-tape recorder was concealed below E's desk.

Procedure.

All of the children were invited to "see some movies." In order to minimize their knowledge of the films and test situation beforehand, the study was conducted by classes. Generally, all of the testing was completed in one class before going on to another. As each pair of Ss completed the testing they returned to their classroom. Then, using a predetermined list provided by the experimenter, the teacher sent the next two children by themselves to "see the movies." The interval between departure and arrival of Ss, approximately 10 minutes, was used by E to rewind the films.

As soon as the S were seated in the viewing room E started the film and took a seat behind them. The cartoons were shown on a large projection screen. Immediately after the film, the children were asked if they would like to see another movie. All Ss responded eagerly and were taken to the adjacent testing room. Upon entering the room E said "I have a lot of work to do (pointing to a stack of papers on the desk) so I will be very busy. But, while I'm working you can watch the movie over here, see?" The experimenter then pointed to the peep-hole in the box and directed each child to look through the hole. Once satisfied that the Ss understood the procedure, E started the film, closed and locked the box, then walked to the other end of the room to "begin his work." He sat with his back toward the Ss and switched on the video-tape recorder. E ignored all comments addressed to him. If any child became insistent he said "I am very busy, I have a lot of work to do." Three male experimenters conducted the study.

In order to rate the children's behavior each video-tape recording was shown once. Each child was rated according to predetermined response categories by either an experimenter or an independent judge, naive as to the treatments used in the investigation. Approximately one-third of Ss were rated by both an experimenter and the independent judge. The Ss were chosen randomly to obtain reliability estimates. The tapes covering the 15 minute testing session were divided into 5-second intervals, yielding a total of 180 observations per child.

Test of Aggression.

The purpose of the test was to create a realistic situation for the instigation of aggression. The procedure may be summarized as follows:

(1) the children were tested immediately after viewing the films, (2) they were presented with an attractive goal, (3) the barrier to the goal was another child of the same sex and age, and (4) in order to attain the goal a child must share the goal, move the barrier, or keep from being moved himself. This paradigm maintains continuous frustration between the children throughout the duration of the test.

Response Measures.

Four response measures were obtained:

Pushing. This category was rated whenever the S who was watching the "peep-show" was pushed or hit by his partner in order to gain access to the peep-hole, and conversely, whenever the child watching the movie responded with similar acts.

Grabbing. This category was rated whenever S grabbed his partner about the neck or waist and pulled him away from the peep-hole.

Verbal Aggression. This category was rated whenever S demanded, in a loud voice, to see the "peep-show." Typical examples include "Let me see!", "Move!" or "Your're taking too long!" Such responses were frequently accompanied by physical aggression.

Sharing. Numerous Ss in our previous research responded to the test situation by taking turns. Therefore, this behavior was also rated. A sharing response was said to occur if the child viewing the movie voluntarity moved aside to allow his partner to watch the movie.

The three aggression scores were summed for each child and these total scores were then used to obtain the inter-rater reliability of aggression. This reliability, expressed by the Pearson correlation coefficient, was .98. The reliability of the sharing ratings was .97.

Results

The mean aggression and sharing scores for Ss in the experimental and control groups are presented in Table 1. Since the correlation between

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Insert Table 1 about here

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total aggression and sharing scores was -.01, these two response domains were analyzed separately.

The results of the analysis of variance performed on the total aggression scores revealed that there were significant treatment ($F = 10.9$, $df = 2,174$, $p<.001$), sex ($F = 13.2$, $df = 1,174$, $p<.0005$), and interaction effects ($F = 7.1$, $df = 2,174$, $p<.01$). This interaction is depicted in Figure 1 and in-

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Insert Figure 1 about here

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dicates that the realistic-aggression film acted selectively on the males. The aggressive behavior exhibited by the boys in this group, compared to the girls, was greatly increased. A test for differences in aggression between the boys and girls within this group was signficant ($T = 9.1$, $df = 1,58$, $p<.005$) while similar tests performed on the other two groups were not ($p>.01$). Figure 1 also reveals that the boys were generally more aggressive than the girls and that there was little difference in the frequency of aggressive responding between the aggressive cartoon and control conditions. Therefore, it appears that disinhibition of aggression occurred only in boys who viewed the realistic adult models.

Analysis of the sharing responses also revealed significant treatment ($F = 7.1$, $df = 2,174$, $p<.001$), sex ($F = 14.9$, $df = 1,174$, $p<.0002$)

and interaction effects ($F = 3.4$, $df = 2,174$, $p<.07$). This interaction is portrayed in Figure 2 and indicates that the girls exhibited a greater number of prosocial responses than the boys in each condition and that

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Insert Figure 2 about here

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they were most cooperative after viewing the aggressive films. Once again, a test for differences between the boys and girls within each condition vealed that aggressive films had also acted selectively on the females, but in a separate response domain. Girls were significantly more cooperative than boys after viewing the real-life aggressive film ($T = 8.5$, $df = 1,58$, $p<.005$) and the aggressive cartoon ($T = 6.2$, $df = 1,58$, $p<.025$), but not after viewing the control film ($p>.05$). Thus, it appears that the dominant response pattern of the girls to the frustrating situation was sharing and that the aggressive films served to intensify their performance of this response.

Examination of the video-tapes revealed an interesting sequence of events. For example, many children would initiate aggression, then quickly stop to look back at E. But, no reprimands were forthcoming. Subsequent aggressive acts would then increase in number and intensity and verbalizations would become louder. In fact, some Ss deliberately elicted aggression from their partners by excitedly describing the film, then denying them access to it e.g., "Oh, it's beautiful!" "Let me see!" "No, you took too long!"

Sharing emerged spontaneously in over 90% of the Ss. However, this response pattern broke down quickly, particularly in the boys, when the

narration and music became very exciting or when one child "took too long."

Discussion

The results of the present investigation support the prediction that modeling effects depend upon both the degree of realism of the model's performance and the similarity between the observer's task and the model's behavior. Boys who viewed the film depicting aggressive behavior between adults were much more aggressive in their play than boys in the other groups. Since the adult aggressive behavior was portrayed almost entirely by male characters and since boys are more likely than girls to be affected by aggression exhibited by male models, these results are consistent with Bandura's (1969) social learning theory. The aggressive cartoons, however, failed to disinhibit aggressive behavior in either the boys or the girls. These results lend support to previous research reported by Hapkiewicz & Roden (1971) and Siegel (1956) who used interpersonal aggression as a criterion measure, and by Osborne and Endsley (1971) who found the emotional impact of cartoon violence (measured by galvanic skin response) to be much less than that which resulted from viewing violence among human characters.

While the boys were more aggressive than girls in every condition, the opposite pattern of results occurred for sharing behavior. Assuming that the test situation was indeed frustrating, it appears that, when thwarted, boys were more likely to react aggressively than the girls who responded by exhibiting more socially acceptable behaviors such as sharing. Such results support predictions from social learning theory which indicates that frustration will elict aggression "...only when a person has learned aggression as a dominant response to emotional

arousal (Bandura, 1969, p. 383)." It appears that the real-life aggressive film further activated the dominant response tendencies of the children. For the boys, this resulted in disinhibition of aggressive tendencies. However, this film, as well as the aggressive cartoons, facilated the dominant response pattern of cooperation in girls. Such results indicate that the consequences of filmed aggression are not necessarily negative, and may in certain cases, activate well-learned prosocial responses.

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Footnote

[1] Treatment - aggressive (real-life): "Pardon my Clutch," A Screen Gems film. Treatment - aggressive (cartoons): "The Green Line" and "The Sky is Falling," Locke Films, Inc.: control film: "Forms of Music." test film: A World is Born "--The Rites of Spring" sequence from "Fantasia." A Walt Disney film.

Table 1

Mean Aggression and Sharing

Scores for all Groups

Response measure	Real-Life Aggression	Cartoon Aggression	Control
Total aggression	16.9	6.2	10.8
Pushing	13.9	5.3	9.8
Grabbing	1.1	.6	.6
Verbal aggression	2.6	1.4	.4
Sharing	24.5	17.2	17.0

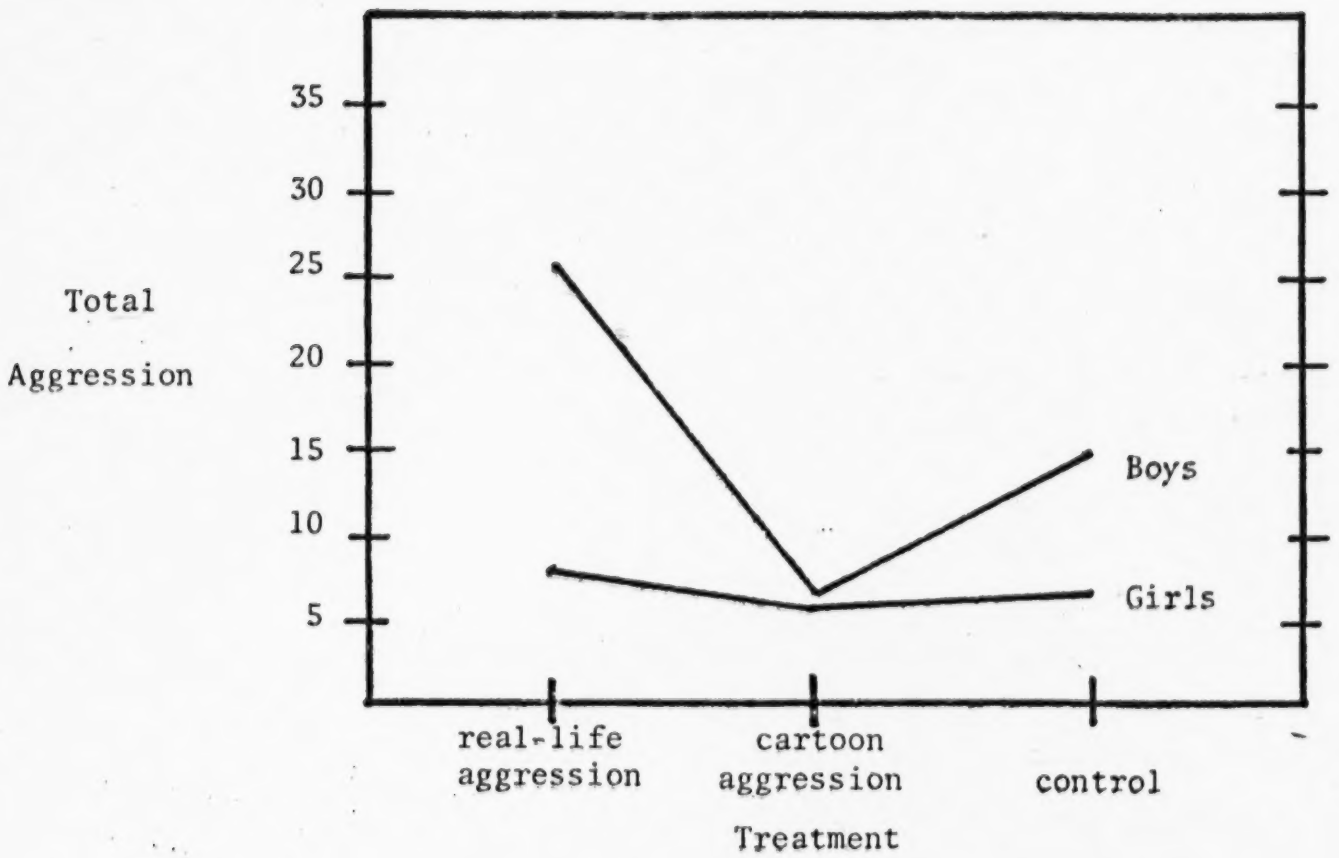

Figure 1. Sex by Treatment
Interaction for Aggression Responses

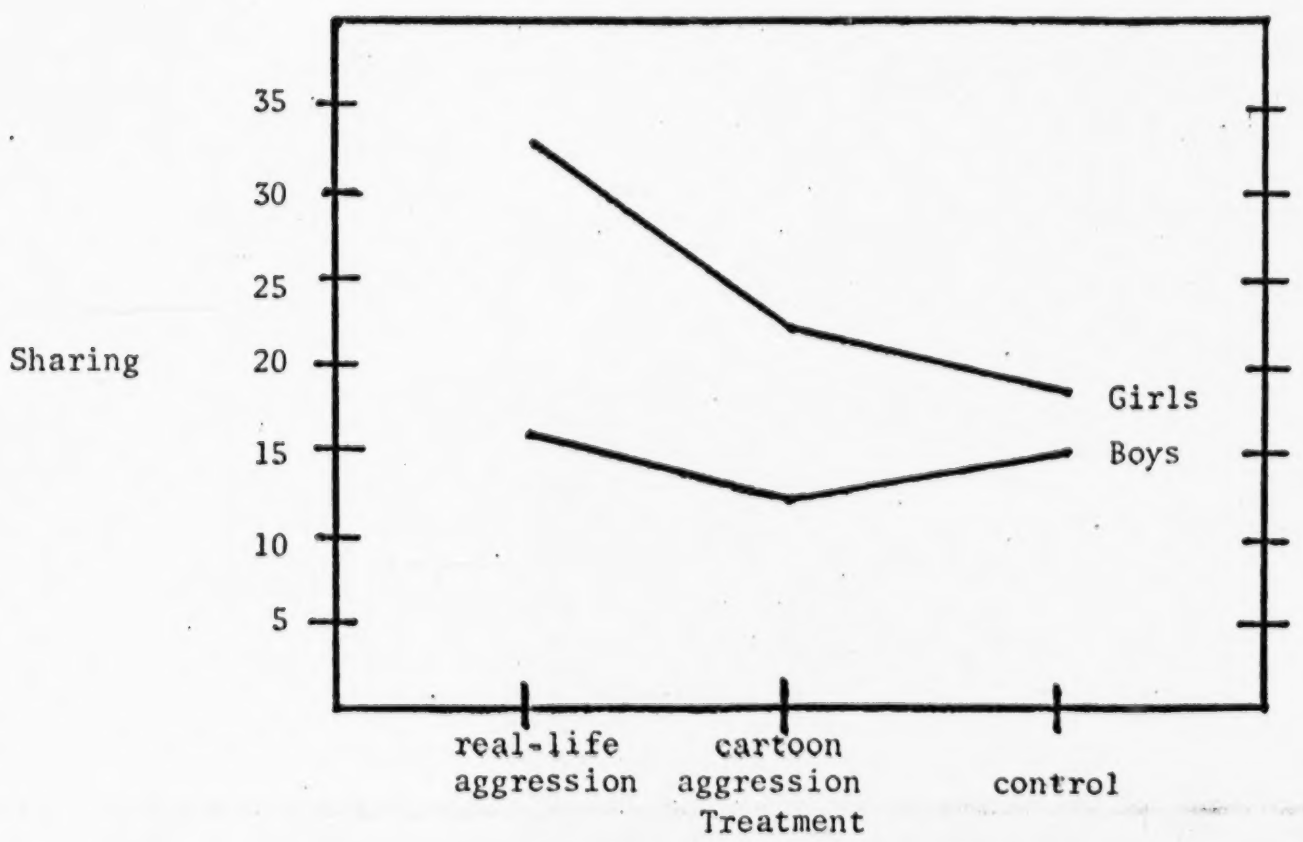

Figure 2. Sex by Treatment
Interaction for Sharing Responses